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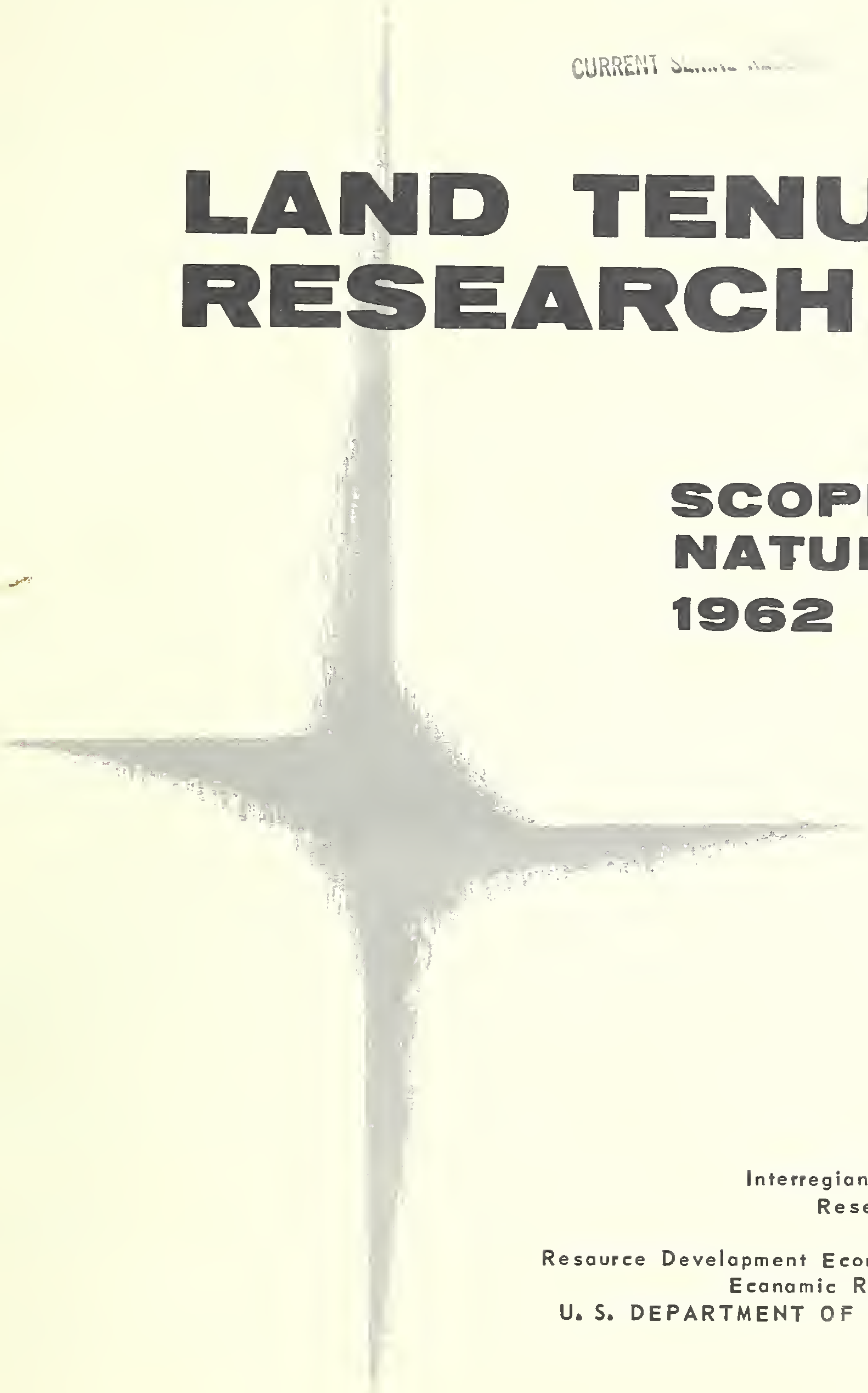

LAND TENURE RESEARCH

SCOPE and NATURE, 1962

Interregional Land Tenure
Research Committee
and
Resource Development Economics Division
Economic Research Service
U. S. DEPARTMENT OF AGRICULTURE

PREFACE

For nearly 50 years the U.S. Department of Agriculture and State experiment stations have sought, through research, to solve new tenure problems arising out of a constantly changing agriculture. This document represents a reexamination of this continuing process of research.

Following the publication of Research in Agricultural Land Tenure--Scope and Method by the Social Science Research Council in 1933, the States of four regions--North Central, Great Plains, Southeast, and Southwest (now combined into Southern)--the U.S. Department of Agriculture and the Farm Foundation formed tenure research committees to study problems of larger than local interest. These committees, separately and jointly, through their Interregional Committee, have maintained a responsibility for continuous review and evaluation of their work. The last published evaluation of the Interregional Committee was entitled Agricultural Land Tenure Research, Scope and Nature: Reappraisal, 1955. The cumbersome title of this document gave way to the shorter "Gray Report", or "Gray Book," terms not illogically derived from the color of its cover.

The supply of the Gray Report was soon exhausted. The Interregional Committee was faced with the decision of either reprinting or rewriting it. In the 7 years since 1955 a number of important national and international developments suggested restudy of tenure research needs. Three major events, the Land Tenure Research Workshop held at the University of Missouri in 1956, the Land Economics Institute at the University of Illinois in 1958, and the Land Economics Research Symposium at the University of Nebraska in 1961, added much to the understanding of tenure problems. Review by, and comments from, members of the regional committees revealed the desirability of doing more than simply reprinting the Gray Report. Accordingly the authors were asked by the Interregional Committee to prepare a revision. This report is the result.

The report contains virtually all that was contained in the Gray Report. However, it clarifies some of the initial propositions, evaluates some of the statements about the bases and functions of research, reviews the suggestions for research embodied in the 21 areas in need of research, suggests some additional problems, and introduces the idea of priority in programming research.

This report, then, is a new statement on tenure research although it builds upon the Gray Report as the latter built on similar statements before it. A discipline or subdiscipline is largely a product of the problems it seeks to solve. Tenure research of today should not be expected to be the tenure research of 5, 10, or 20 years ago. In itself this may seem obvious, but in a larger social science framework, research people are prone to have pigeonholes for the several fields represented. This reappraisal may show that the tenure pigeonhole has been changed in shape.

It should be emphasized that the report is not intended as a final work; it is "a look around" as of the present moment. Reappraisals should be made of the field of land tenure research at periodic intervals.

The report was written primarily for research workers in the field of land economics. However, it will also be of interest to other social scientists, administrators of research programs, and graduate students.

A complete bibliography of research publications in land tenure for the period 1955-61 is being compiled by Marie B. Harmon of the Resource Development Economics Division, Economic Research Service.

The authors wish to express their appreciation to the many individuals and committees who provided material and suggestions in the preparation of this report. The Southwest Land Tenure Research Committee submitted a thorough report based on a review of the Gray Report. Members of the Great Plains Resource Economics Committee submitted suggested revisions and other comments following a one day workshop held in 1959. Several persons from the Economics Research Service of the U.S. Department of Agriculture contributed. Materials compiled by the North Central Land Tenure Research Committee and the Southeast Land Tenure Research Committee were drawn upon importantly. Very helpful comments and suggestions were made by W. L. Gibson, Jr., Burl Back, and Don Kanel.

The authors had to make many arbitrary decisions on content, particularly with respect to differences of opinion and matter of judgment. Thus they are responsible for any deficiencies which may be noted.

CONTENTS

Page

Preface i
Orientation of tenure research 1
  Objectives of tenure research 2
  Basic and applied research 3
Areas of tenure research 4
  Achieving efficiency in agricultural land use, development, and conservation through alternative tenure arrangements 4
  Land tenure processes and getting started in farming 5
  Relation of farm credit to attainment of tenure goals 6
  Relation of tenure to risk and uncertainty 7
  Taxation in relation to ownership and use of resources 7
  Farm leasing arrangements and the rental market 8
  Valuation of rights in land 9
  Agricultural and development programs 10
  Effects of farm management services on farm tenure 10
  Industrialization, part-time farming, and rural residence 11
  Water rights and water resource uses 12
  Public interests in private land 12
  Private interests in public lands 14
  World land tenure problems 14
  Land tenure problems of special groups 15
  Mineral developments 16
  Recreational land 17
  Tenure aspects of agricultural labor 18
  Law and land tenure 18
  Mechanization and farm tenure 19
  Institutions affecting the mobility of resources 19
  Eminent domain and other forms of public acquisition 20
  Nonagricultural land tenure problems 21
  Inheritance and estate management 22
  Corporations and the organization of agriculture 23
  Contracts and the organization of agriculture 24
Prediction, prescription, and public policy 24
Organization and priorities for research 26

LAND TENURE RESEARCH: SCOPE AND NATURE, 1962

By Howard W. Ottoson, Gene Wunderlich, and Howard G. Diesslin [1]

ORIENTATION OF TENURE RESEARCH

This report pertains mainly, but not exclusively, to land tenure relationships in agriculture. Various persons and groups in the past have wrestled with definitions of tenure and have attempted to delineate the field. In 1919, a committee on Land Economics was appointed by the Secretary of Agriculture to plan investigations "in land tenure and land utilization." This committee recommended that the section in the then Bureau of Farm Management and Farm Economics be called the Land Economics Section.

Much later the Social Science Research Council supported the efforts of an advisory committee on Social and Economic Research in Agriculture to outline the research content of the field, resulting in the previously mentioned Research in Land Tenure--Scope and Method, edited by John D. Black.

Further efforts along this line, as well as progress in methodology and theoretical matters, were accomplished in the land tenure workshops sponsored by the land tenure research committees. Following is a complete list of these workshops (copies of these reports no longer available):

Land Tenure Pilot Workshop, Deer Path Camp, Land O'Lakes, Wis., July 30-August 4, 1945.

Land Tenure Research Workshop, Deer Path Camp, Land O'Lakes, Wis., August 12-24, 1946.

Land Tenure Research Workshop, Holiday House, Eldon, Mo., August 11-23, 1947.

Land Tenure Research Workshop, Science Camp, University of Wyoming, Centennial, Wyo., August 16-28, 1948.

Land Tenure Research Workshop, Blue Ridge Assembly, Blue Ridge, N. C., August 1-13, 1949.

North Central Land Tenure Research Workshop, Camp Rabideau, Blackduck, Minn., August 24-September 2, 1953.

Land Tenure Research Workshop, University of Missouri, Columbia, Mo., July 16-27, 1956.

Land Economics Institute, University of Illinois, Urbana, Ill. held during the summer of 1958. Proceedings published as a book, Modern Land Policy, by University of Illinois Press, 1960.

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Land Economics Research Symposium, University of Nebraska, Lincoln, Neb., June 17-24, 1961. Proceedings published as a book, Land Economics Research, by Johns Hopkins Press, 1962.

In considering the nature of tenure research it is instructive to note its relationships with allied disciplines. In the first place land tenure is conventionally grouped in the general field of economics. This is convenient, but not completely descriptive. It does not draw all of its assumptions or models from the field of economics. Other disciplines such as law, political science, geography, sociology, psychology, and history have contributions to make in the definition and isolation of variables in land tenure problems. The emphasis in this publication identifies tenure in large part, although not exclusively, with the field of agricultural economics. Conventionally, it is considered as a specialized part of the field of land economics.

What is the relation between land economics and production economics? Production economists are concerned with the efficient allocation and use of land, labor, and capital in the production of goods and services. Land economists focus on the special problems of land, although they are certainly interested in other resources besides land. They become involved in matters of alternative uses of land, and of efficiency of land use. From this standpoint land economics is an applied field of production economics.

In addition to their interest in use that is made of land resources, however, the special interests of land economists lead also to matters pertaining to the control of such use, the economic relations associated with land as property, the nature of the organizations or institutions by which the use of land is controlled, and the roles which these means of control play in the distribution of income. This is the field of land tenure. In essence the tenure approach to research emphasizes property rights, control, and organizations, and regards institutional arrangements as variables in analysis, rather than taking them as given.

Objectives of Tenure Research

The Gray Report suggests that tenure research is oriented toward three objectives: (1) efficiency of resource use, (2) stability of resource productivity, and (3) equality of access. These objectives are assumed by the authors to be relevant public objectives of land tenure research. The Gray Report is not clear as to whether these objectives are to be taken as empirically based (in which case they are subject to real doubt) or as a set of goals which "ought to be" (in which case documentation as to the authority for the assumptions is needed). Under the latter assumption, a research problem involves three segments: (1) A specification, or a translation, of these goals into the context of a problem situation (called a theoretical norm); (2) an inventory of the existential situation in terms parallel to those in which the norm is posed; and (3) a measure of the deviations between values in (1) and (2), the result of which then is termed the "problematic gap." Following this, attention is given to "identifying and measuring elements of the problem that (1) prevent the present situation from being identical with the desired situation (the failure elements) and (2) tend to make the present situation similar to the desired situation (the success elements)." This approach, called the normative approach, is concise and tight; the policy implications of the research are quite clear--how we get from the actual situation to the norm.

The normative formulation is unnecessarily narrow. Inherent in it is the danger of confusing explanation and prescription. When one speaks of deviations from an ideal situation, one is constrained to ask, "whose ideal?" In the normative setting, theory provides the basis for specifying the ideal, the present situation, and the deviations between the two. The theoretical formulation may be mathematical in character. The soundness of the mathematical relations of theory do not make the theory empirically meaningful. It is over-simplication to implicitly assume the existence of a goal which is universally sought after in society, and then suggest that the main effort is simply to try to achieve it. In the first place there can be goals other than efficiency, stability, and equality of access; such things as economic progress, distribution of income, political freedom, freedom from economic restraint, balanced growth (both geographically and between industries), security, and justice come to mind. Obviously, these goals are not simple, but very complex, and have their origins in the same culture in which we identify economic relations. In the second place, and perhaps even more important from the standpoint of research, the three objectives suggested in the Gray Report are so general, so obscure, that they are of little use empirically.

The distinction between the normative approach and the positive approach with respect to problem formulation appears as a difference in the way a problem is defined. Under the normative approach a problematic area is the "difference between the present situation and an end." A problem in the positive frame of reference is a statement of an expected relationship between variables relevant to a given situation; thus, it might be simply a question such as: "What is the effect of so and so on such and such?" or, "To what extent is variable X associated with variable Y?" The problem is important, not because of a wide "gap," but because the researcher and his supporters believe that its solution will add to our store of knowledge and justify the expenditure of research resources.

Basic and Applied Research

Increasing attention has recently been given to attempts to distinguish between basic research and applied research. Such attention has taken the form of arguments between research people, analysis of budgets of research agencies to see that proportions are devoted to each type, and considerable conjecture in the popular news media as to our progress in pursuing basic research, especially in comparison with other countries.

Despite this attention, the distinction between basic and applied research remains vague--perhaps justly so. This can be illustrated by some definitions which have been suggested. The National Science Foundation defines basic research as

> ....systematic, but without direction save that which the investigator himself gives it to meet the challenge of the unknown. He is strictly on his own, guided primarily by his interest in learning more about the workings of nature.
>
> His work may be contrasted with that of scientists and engineers conducting applied research (laboratory studies concerning the practical use of newly found knowledge) or of development, which takes applied research out of the laboratory and translates it into production. In applied research and development an unexpected problem is essentially a negative thing. It represents a source of delays, an obstacle to be overcome, preferably in the not-too-distant future.
>
> Basic research is that type of research which is directed toward increase of fundamental knowledge in science. It is research where the primary aim of the investigator is a fuller knowledge or understanding of the subject under study.
>
> Applied research . . . is that type of research which is directed toward practical applications of scientific knowledge.

Fundamentally, the reason for the element of vagueness which surrounds attempts to distinguish between basic and applied research is that basic and applied elements are both part of the generalized research process--parts of a spectrum as it were. Most applied research, has basic, or theoretical aspects. Likewise, it is doubtful that the research activity of the most intensely theoretical nature is carried on without some orientation to practicality. Whether or not basic research is carried on is doubtless a function of the training and personal characteristics of the researcher, assuming freedom to work on the topics of most personal interest to him. Some people are happiest when working on problems of application, and will not contribute to basic knowledge even if "ordered" to do so. Others will indulge in conceptual activity of a basic nature almost unconsciously, even if burdened with full time applied work. Most people perfer a combination--in fact, most research procedure implies such a mixture.

Despite vagueness of definition, however, it is fundamental research which produces the great intellectual discoveries. Until recently its role has not been widely recognized in America. The decade of the 1950's has seen much more recognition of basic research, particularly in the physical sciences.

From the above what do we conclude for land tenure research? Research projects are often justified in terms of direct benefits to the people concerned, or in terms of "severity of the problem." Ought we not also justify our research activity in terms of interesting new relations to be exposed, or of the possibility of contributing to fundamental knowledge in the field?

AREAS OF TENURE RESEARCH

The subject matter of tenure research is usefully defined by the problem areas suggested by the responses of social scientists when asked, "What relationships in tenure should be studied?" This collective image, in a sense, identifies a "field" of study but it does so loosely, broadly, and indefinitely. We should make no pretense that this "listing" approach is the well-calculated result of a logically constructed system of objectives.

A review of 21 areas of research listed in the Gray Report, 7 years after that report was published, suggests that changes have occurred in the relative importance of each in the collective image but most of the subject areas remain. Why? Because they were not stated as specific research projects but as whole subject matter areas. All but one of the areas are listed in the present report, much digested and sometimes greatly modified, to show the change in the image. The present report lists 26 areas of subject matter of tenure research. A separate section is devoted to criteria for priority, leaving the decision of priority to the researcher or research administrator.

This listing does not--repeat, does not--suggest priorities. Careful consideration of the committee has revealed that projects have priorities but subject matters such as these are too general to be of direct help in the immediate problems of programming research resources.

In general, the conditions of the agricultural industry are an extension of trends of 1955. Agriculture has fewer farms, larger farms, closer integration with prefarm and postfarm production, larger capital requirements, and increased amounts of nonlabor inputs resulting in more intensive use of land.

However, a few changes, such as revision of the income tax law for small corporations, greater public awareness of recreation, increased rural development programs, the growing nonfarm use of land, more intensive water demands, vertical integration, and foreign aid programs affect future research needs. Likewise, improvements in research techniques and computer capacities will increase the feasibility of using refined models. Advances in regional analysis, organizational analysis, and input-output analysis are examples of new approaches or new uses of available methods.

Achieving Efficiency in Agricultural Land Use, Development and Conservation Through Alternative Tenure Arrangements

As land tenure arrangements can facilitate or obstruct efficiency in the use of farm resources, constant scrutiny needs to be given to the present and emerging forms of arrangements. Tenure arrangements will obstruct efficiency if they do not encourage enlargement of farms to meet technological changes; do not give security of tenure that will lead to adoption of effective long-range farm plans and improved farming practices; and do not give a fair division of costs and returns between the individuals involved. The wide variations among farms, farming areas, and individuals and the rapid changes that are taking place in agriculture call for wide and continuing examination of farm tenure arrangements as to their effects on resource use.

Except for a few studies that illustrate the possible effects of alternative tenure arrangements on resource use, most tenure research has been concerned with the traditional broad tenure classes rather than tenure arrangements per se. These broad tenure classes tend to conceal intraclass variations in tenure arrangements and their effects. Hence much more emphasis needs to be placed upon specific tenure arrangements in order to have meaningful empirical findings.

One important aspect of research on tenure arrangements, that affecting uncertainty of tenure, is still virtually ignored in empirical work. The analytical models as they have been used are not appropriate for dealing with questions in which time and behavior of individuals are involved.

With a few minor exceptions, the role of the landlords in achieving efficiency has not received the scrutiny that it might deserve. Most of the studies have been made from a tenant's point of view, without bringing landlords explicitly into the picture. Information about them has been partial and secondhand.

In the South an adverse social attitude toward renting land appears to still exist, and one can hypothesize that this is an institutional factor that helps to explain the failure of some owners to increase the size of their farms by renting additional land. Idle resources exist under an institutional situation that retards profitable use.

Presumably, changes are occurring in types of tenure arrangements, but little work has been directed toward finding the reasons for and consequences of such changes.

Studies are needed in such phases as:

(1) The effects of specific tenure arrangements (rather than the broad tenure classes);

(2) Effects of farm-tenure uncertainty and expectations;

(3) Changes in tenure arrangements that are taking place, the reasons for such changes, and their consequences;

(4) The particular role of part-ownership arrangements which have been gaining importance by their growth in numbers and acreage;

(5) The decline of cropper agreements in the South, factors causing the decline and the resultant effects upon production efficiency, and effects on the welfare of croppers.

Land Tenure Processes and Getting Started in Farming

The general hypothesis is that it is becoming increasingly difficult to get started in farming. To the individual who wishes to farm but lacks the capital needed, the problem of getting started is becoming more acute. To the advocates of further reducing the number of people in agriculture, the more formidable barrier to farm operation and to ownership may be considered to contribute to the solution of the "farm problem." Also, the relative increase in ownership operation and the lesser decrease in number of owner-operators than in number of tenants may appear on the surface to tend to negate the positive hypothesis. However, the abnormally greater average age of farm operators over that of the normally employed population raises the question of whether the replacement of the human resource is, or will become, a problem and whether persons best suited to agriculture will have adequate access to the land.

One of the basic objectives related to the problem of getting started in farming is the allocation of farming opportunities among young aspirants in such a way that the agricultural plant would be operated with maximum efficiency. Another objective is that, as near as reasonably possible, all potential farm operators of equal ability should have equal access to our agricultural resources. A third objective is to minimize economic instability due to tenure arrangements. Considering the methods of remedying these situations, it is essential to determine:

(1) How many farming opportunities are available;

(2) Who are the potentially good farm operators interested in getting started in farming;

(3) How these people can be assisted in farm operatorship and tenancy at an efficient level of operation, independent of the quantity and sources of aid that they have available.

Some aspects of the problem of getting started in farming are interest rates and the availability and flexibility of arrangements for credit; the price of land and whether nonagricultural use and demand inflates it beyond its value to persons depending on agriculture for a livelihood; the effect of tax policy; the role of migration from farms in increasing the incidence of inheritance of farms by nonfarm residents; and the extent of the renewal of the capital investment by each generation of farmers. In family succession on farms, the effects of younger marriages, lengthened life expectancy, and the extension of the time that the son is working for himself before the father is ready to transfer the farm, to him need to be considered. Other aspects of the problem are the extent, and effects on farm operation transfer, of semi-retirement on the land of both farmers and people from nonfarm areas and whether retirement insurance benefits tend to advance or postpone the transfer of land-use and ownership.

The acute and continuing drop in the number of renters calls for examination of the demand and availability of land for leasing and the extent of vertical mobility on the agricultural ladder. The leases should be analyzed for equity and for efficacy in enabling young men to get started in farming with a minimum of capital.

Relation of Farm Credit to Attainment of Tenure Goals

Capital is an essential factor of production, and like other production factors it is generally available in less than desired quantities; however a close substitute for owned capital is the use of credit. When capital reserve is lacking, credit can fill the gap.

Credit provides the laborer with needed capital when emergencies arise; it provides the tenant with capital to meet his variable costs of production; and it supplies the operator with capital for purchase of land and buildings. Very few prospective farmers have the required capital to purchase a farm outright. It is primarily through the use of credit that farm property can be acquired.

Recognizing the limitations imposed by the lack of capital in carrying out farm operations, both private and public agencies have emerged to make capital available in the form of credit. Capital provided in this way must eventually be repaid--not only the initial amount, but also a service charge for the use of this capital. It is this aspect of credit that imposes an additional burden upon those least able to afford it. Yet it is through the use of credit that many businesses are able to command sufficient capital to begin operations.

Most of the research to date has been concerned with identifying the sources of credit and learning to what extent farmers utilize these credit facilities and what interest rates they pay. These past studies could be described as primarily descriptive.

Future studies are needed to provide information for use in making decisions concerning the use of credit. How much more income can a farmer realize from the use of credit as opposed to a farmer who, in similar circumstances, refuses to use credit? When is the use of credit justified and when is it not? How much competitive advantage does the farmer with sufficient capital have over the farmer who must rely on credit for his operation? What is the optimum relationship of credit to total capital on our better commercial farm properties? Has American agriculture been oversold perhaps on fully amortized real estate loans during the past quarter century? Is there economic justification for perpetual indebtedness at modest levels on good commercial farm real estate? What improvements are needed in the quality and quantity of credit services from lending institutions serving agriculture?

Relation of Tenure to Risk and Uncertainty

The tenure system cannot be used to eliminate the basic causes of risk and uncertainty. Risk can be reduced only through technological progress, such as the development of drought-resistant corn or rust-resistant wheat, whereas uncertainty can only be diminished by such actions as stabilizing the general level of prices and other economic factors which are variable but related among themselves. The most that can be achieved tenure-wise is to make the tenure system a neutral force when the farm operator attempts to deal with risk and uncertainty.

Lack of adequate provision for meeting risk and uncertainty may cause less than optimal use of resources and inefficiency of production, and may prevent reaching the othersise attainable level of living or well-being. Unpredictable changes in output and prices of farm products and in income cause instability at both individual and social detriment. The null hypothesis is more qualified: the outlook for risk losses that can be offset by extra effort and application of resources has a stimulating effect upon economic activity.

Some factors that are related to farm and family flexibility in offsetting or withstanding losses and reducing risk include: the equity or debt situation; the size, specialization or diversity of the business, and the organization of enterprises; the tolerance limits of living needs; the inter-relatedness of the farm and family budgets; and the disposition and habituation of the operator toward customary ways of operation and his personal adaptability or potential for change. Since the economy of the family and farm is integral, risk and uncertainty in respect to family living are as relevant to stability as is risk in the business itself. For example, inquiry is needed into unexpected costs or obligations for medical care or for the replacement of living facilities destroyed by fire or storm. The probability of such unexpected expenses and the measures taken to mitigate the risk should be assessed.

Among exogenous factors that may be mentioned are the variability of product prices, weather and other external causes of yield fluctuation, and the compensatory nature (or lack of it) of price and yield fluctuation. Other external factors that need to be studied are the origin, operation, and effectiveness of such institutional arrangements for control as crop insurance, price supports, and acreage limitations.

Taxation in Relation to Ownership and Use of Resources

Taxation has two basic functions: (1) the diversion of goods or resources from individual control to group control in order to attain ends that can be accomplished more effectively by concerted action rather than by the summation of individual action, and (2) the encouragement (or discouragement) of the consumption of goods or the utilization of resources in certain uses. Much attention over the years has been given to the "equitable" distribution of the goods and services diverted in the fulfilling of the first function. Only recently, however, has any attention been given to the use of taxation in regulating the distribution and use of land.

With respect to the second function, the objective of tenure research in land taxation should be to determine how taxes can be used to assist the tenure system in fulfilling its role with respect to overall social goals. To the extent that land values represent the capitalization of land returns, taxation is related to efficiency, stability, and equality of opportunity.

Any tax must ultimately be paid from the return to one or more factors of production. This reduction in return in some instances reduces the amount which can be economically employed with the result that the quantity of the factor in existence may be diminished.

The impact of various types and levels of taxation on the relative prices of factors of production may have an important bearing on tenure arrangements. In the extreme, for example, a tax equivalent to the total return to land is tantamount to public ownership. A complete absence of land tax may only increase the tax on, hence the return to and employment of, other resources.

A further area of potentially profitable inquiry centers around the estate, inheritance, and gift tax structure. There is need to ascertain whether or not the impacts of these taxing practices upon efficiency and equality of opportunity have been accorded proper consideration.

The study of differentials in the tax burden growing out of improper assessment procedures is of a secondary nature. Since these differentials would be of no consequence in land markets which properly discount such taxes, this problem is properly a study in land values.

Farm Leasing Arrangements and the Rental Market

Leasing problems are of fundamental concern to everyone interested in the efficient operation of American agriculture. Levels of tenancy and land productivity are directly correlated: more than half of the total agricultural output comes from farms dependent entirely or in part upon rented land. While tenancy arrangements have been a matter of concern to the American agricultural economist for nearly half a century, studies and action in the area have lagged far behind those of European countries. The old world has found the price of unlimited fee simple control of its landed resources in the hands of individuals too great in terms of food and fiber foregone by society.

The objective of research in leasing arrangements is to devise means for separating the ownership and the use of resources (primarily land and buildings) in such a way that efficiency of resource use is not impaired and preferably is improved.

There are many reasons why leasing arrangements can be expected to interfere with resource use. Rental terms tend to become enmeshed in the customs and mores of the community and thus provide a relatively static framework in which resource allocations must be made in response to a dynamic economic environment. These rental terms, relatively inflexible in character, have embraced a set of dissociations of costs and returns between individuals and points in time that create incentives for the operator to conduct the operation at less than optimum level. Examples of these dissociations include the sharing of returns from investments made by one party to the contract, so that the investor receives only a part of the return to the resource and hence will restrict its use; allocation of different shares for different enterprises with the result that the operator has the incentive to allocate an uneconomic amount of the firm's resources to those enterprises in which he receives the larger share of the output; inability of tenants, because of short leases and the operation of the rental market, to realize the benefits of investments in which the costs and returns are dissociated in time; a low correlation between the charges for land use and the earnings of land so that the operator may be required to hold a part of his resources in a low yielding but readily convertible use.

Needed research in this area involves:

a. Determination of the extent to which methods of securing temporary operational rights in land result in an economic output from resources used in rented firms that is less than the maximum obtainable.

b. Determination and isolation of the effects of the division of the managerial function, the dissociation of costs and returns, and the insecurity of tenure expectations on the quantities, and hence the productivities, of land, labor, and capital employed in tenant-operated firms.

c. Determination of the adjustments and modifications in rental arrangements that can be effected toward the end of better resources use on rented farms through such measures as flexibility in rental payments, longer term leases, and effective compensation plans.

Valuation of Rights in Land

The function of price with respect to farm real estate is the same as for any other economic goods--to allocate the goods among uses and users. Price is merely a monetary expression of relative value for convenience in transactions. Because of the characteristics of land--its transactional association with other economic goods such as buildings, the lack of recognized specific grades, its multiple use alternatives, and its durability--price determination for a specific property requires an individual appraisal.

Although many peculiar problems arise concerning valuation of claims such as easements or fractional interests, the problems of valuation center on establishing a price for such transactions as transferring ownership, mortgaging or leasing, or for taxation purposes. Unless the price so determined is in keeping with the property's marginal value productivity, there will be incentives within firms, between firms, and between industries for uneconomic substitution of factors, with the consequence that resources will not be used efficiently. Individual and societal interest in the price of land stems from, and is associated with, the effects on resource allocation and use. Research on problems of land prices and land pricing is therefore concerned primarily with the efficiency objective. But pricing land in keeping with its productivity will also contribute to stability of occupancy and income. Any rapid change in the movement of land prices has both immediate and long-term effects on tenure status.

The basic purpose of research in land pricing is to devise procedures that can be used by buyers, sellers, renters, landlords, lenders, borrowers, and other evaluators to overcome imperfections in the farm real estate market, and thereby to improve the efficiency of the market in allocating resources within firms, between firms, and between industries. In greater detail, this means: (1) to determine the nature of the imperfections in the farm real estate market; (2) to determine the elements of the market situation that cause land prices, whether the use price in rental or the value in transfer of ownership, to fail to reflect properly the productivity of the land; and (3) to devise ways and means of improving the market mechanism and the pricing procedures in order that acquisition of land will not in itself detract from the efficiency, stability, or equality objectives in tenure arrangements.

Historically, land market research has been focused on a description of the land market drawn from interviews with farmers and land market specialists, and a study of records of land transfers found in county courthouse records. The nature of this research in general has been to describe the price of agricultural land, to construct indexes, to relate the present price with past prices, and to analyze the price of land in an attempt to associate it with various economic forces in the economy. Correlation analysis has been used a great deal in these attempts to associate land values with other factors. In land market research there has been a great deal of emphasis on the relationship between land values and the capitalized value of land based on its value in agricultural production.

Little research has been done on the structure and functioning of the farm land market. More needs to be known about relations between land income and land price, local and areal differences in price movements, effects of credit availability, significance of alternative income-earning opportunities, effects of functions performed by dealers and realtors, forces determining rental values as compared with sales prices, relations between structure of the title market and structure of the rental and credit markets, and the effects of institutional patterns and forces on both individual and group bases. Relatively little attention has been given to analysis, in either the positive or the normative sense, of forces determining land prices in the functional environment in which the market operates, and particularly in the macro-economic relations which influence individual behavior.

Agricultural and Development Programs

The importance of land tenure to various agricultural and development programs depends largely upon the relationship of property to the distribution of income, Government programs which directly or indirectly affect the value of resources by affecting the value of products or which affect the distribution of rights in resources, will also affect the economic well-being of individuals and the public. Price supports generally raise the value of resources used to produce the supported product, but the ways in which the prices are supported can have differential effects on the relative values of the resources. Restraints on the uses of resources, even if they do not lower their immediate value, may limit the supply of future services from the resources. Programs which influence the prices or the possible uses of resources, presently or over time, simultaneously affect distribution of wealth, production efficiency, and economic growth.

Government programs cover a wide range of activities, but apparently of most relevance to tenure are those that (1) limit access to resources in order to control the supply of certain products; (2) assist in reorganizing or improving farms and farm production such as credit and extension programs; (3) make such conservation and development investments in long term resource use as conservation payments to farmers, river basin development, and development of transportation, and (4) make personal assistance and welfare payments. The last group includes programs of education, occupational transfer and resettlement, and old age and health insurance. These would have indirect, but perhaps significant effects on employment, occupational opportunities, rentals, land transfer plans, and general well-being. Research on these programs initially should be to determine the incidence of benefits of the programs and the effects of the distribution of these benefits on resource use, savings, and employment. For example, the benefits of some programs appear to be partly capitalized into land values and thus to accrue to present owners. If so, high value of land may restrict the quantity used relative to other resources and place a serious capital restraint on operators. An evaluation of programs should include determination of the incidence of benefits among individuals and areas, and between agriculture and other industries.

Although the public is frequently affected by major programs of resource control and use, most tenure rights are determined in smaller jurisdictions; viz, State and local governments. Thus the Federal Government has relied more on public investment and assistance than on adjustments of rights of individuals in resources. In effect, Federal programs are implemented through general taxation and particular expenditure. The important questions are not whether a program transfers income--virtually all do--but whether the transfers produce the intended results. Where intended results are not forthcoming, modifications in the program may be necessary. Research should provide predictions of the expected consequences of different, feasible courses of action. Mere identification of the functional distribution of benefits, although helpful, may not predict behavior well enough to guide the planners' proposals.

Effects of Farms Management Services on Farm Tenure

During the last 25 years agricultural advisory and supervisory services have increased rapidly. Professional farm management services have expanded, both with respect to the number of clients served and the variety of services offered. Many banks have installed agricultural agents to work with farmers in developing farm plans and financial programs suited to their capital needs. In fact, many banks offer complete supervisory service. Similarly, many credit agencies are developing the same services. In addition, the Farmers Home Administration has extended technical aid and supervision along with credit.

The objectives of research in this field are (1) to determine the manner in which the availability of farm management services influences investors who would not otherwise buy farms, (2) to devise procedures and practices through which supervision and technical assistance can increase income on low-income farms, and (3) to suggest improvements in supervisory functions so that the leases used do not interfere with efficiency of resource use or distort income distribution on leased farms.

The expansion of farm management services also makes it possible for an individual to own land although, because of geographic location or lack of experience, he may not be able to manage a farm himself. This service may well have the result of broadening the land market, increasing the demand for farmland, and increasing the price. In addition, farmland may be made an object of speculation by those seeking a hedge against inflation and the fluctuation of land prices may be increased.

Studies are needed to determine the impact of these services on the farm real estate market and upon the tenure pattern. Particular areas that need study are the impact of farm management services on (1) the type of decisions made by the landlord and by the tenant, (2) resource allocation and use, (3) the development of managerial competence and skills, (4) the acquisition and application of technical "know-how", and (5) the amount of total farm income and its distribution. Study is also needed to determine the long-time social implications of these new trends and developments.

Industrialization, Part-time Farming, and Rural Residence

Recent years have witnessed a movement toward the establishment of industries in rural areas and a trend toward part-time farming. These developments affect agriculture in many ways, including tenure arrangements. Where a substantial number of farmers change to industrial work or to a combination of part-time farming and nonfarm work, changes in the organization of the factors of production on given farms as well as in the economic and community life of the area are likely to result.

There is considerable literature on the economic and social effects of rural industrialization and part-time farming. The findings of the reported studies are indicative of the impact of industry on agriculture. However, most of the studies have concentrated on income factors and have treated tenure changes incidentally, if at all.

Most investigations of the above phenomena imply that some tenure changes have come about as a result of industrialization, and indirectly suggest the need for more intensive study. For example, it was determined in recent studies that industrial employers in rural areas are likely to employ relatively young persons with some nonfarm work experience. Obviously, this practice has important implications for agriculture. One can ask such questions as: Will the older persons left on the farm carry on at the same level of operation, and what will be the tenure characteristics of younger persons who accept nonfarm employment? Other pertinent considerations are the impact which industrialization will have on types of farm enterprises, on acceptance of improved farm practices, on levels of living, and on social participation of farm families in general. In addition, little is known regarding the type of rural community in which industrialization will succeed and the types of tenure systems that will lend themselves to a combination of farm-off-farm work.

In conclusion, there is no doubt that rural industrialization represents a trend which has captured the imagination of many people. Industry is seen by them as a way out for low-income farm areas. In this sense there is need for thorough study of the end results which a continued and prolonged industrialization might bring about.

Water Rights and Water Resource Uses

Water resources are attracting more attention today than ever before because of population growth, increased urbanization and industrialization, and improved standards of living. The daily use of water in the United States in 1900 was less than 95 gallons per person. By 1950 it had increased to 138, and in 1955, it was estimated as 143 gallons per person per day. The consumer demand in American cities alone is growing at a rate of about 1 gallon per person per day, attributable primarily to the increased number of air-conditioning installations, automatic dish washers, laundries, garbage grinders, lawn sprinklers, and multiple bathroom facilities.

Irrigation for agriculture has also expanded rapidly. In the Western States from 1945 to 1950, an average of more than a million acres per year was added annually to the irrigated land area. In the humid regions of the South and East, supplemental irrigation increased from 739,000 acres to 1,517,000 acres during the period 1939 to 1949.

As the competition for existing water supplies increases, rules and procedures for acquisition and transfer of water rights become more crucial. In some States the common law doctrine gives the riparian owner the right to the stream that flows past his property. In States where the reasonable use doctrine prevails, he is permitted only a reasonable use of the water. In other States, particularly in the West, water use is governed by the prior-appropriation doctrine. In any case, the ownership and use of water resources becomes very complex; not only are individual interests involved, but local, State, and Federal governments have become concerned about this vital natural resource.

Research to date has been centered around the legal aspects of water use in a very technical sense and has been primarily concerned with the use of surface waters, especially for irrigation purposes.

In addition to research presently underway, more work is needed on the economic productivity of water in alternative uses, the time distribution of water supply in relation to demand and storage costs, and the effect of institutional arrangements on the incidence of costs and returns from water.

Economic research on problems of water rights and water resource use needs to be focused on conflicts of interest with respect to water, and assembling information which will facilitate compromise and resolution of conflicts. Research should provide information for intelligent decision making on the part of water users, public administrators, boards of directors for special districts, and others who plan and finance water development and use.

Among the neglected areas of research is that of ground water, from the standpoint of physical supplies and economies of use at various rates.

Public Interests in Private Land

Private land owners and operators do not always use their lands in a way consistent with public objectives. Soil erosion and depletion, uneconomic sizes of farms, and insecurity of tenure are frequently associated with private land use. Consequently Federal, State, and local governments have taken extensive and varied actions entailing large public expenditures in grants and services, credit, and control legislation. Yet, such conflicts between private and public objectives continue as is almost inevitable in a dynamic society.

Specific public land use programs are based on several implicit or explicit assumptions: (1) Private land use may not be in keeping with the public interest; (2) the public program will result in increased public benefit at least equal to the cost of the program;

(3) the program is presumed to be the most economic approach, recognizing the political process by which programs come into being.

The limitation of rights in land to specific areas which are located in a broader environment of weather and topography can give rise to a spatial dissociation of costs and returns. For example, one farmer may employ practices, such as extensive row cropping, that yield a relatively high return because the full incidence of the costs do not rest with him but are borne in part on his neighbor's downslope in the form of siltation or gulleying. Similarly, a substantial part of the costs incident to farming operations at the head of a watershed or river basin may be borne by residents downstream through the increased runoff in the form of recurring floods. In the same manner, the full cost of the farming practices that result in dust bowl conditions are not borne by those farmers who gain the return but may fall upon the entire population of several States on the downwind side.

Conversely, the spatial dissociation of costs and returns may prevent the adoption of many remedial measures necessary to improve the use of resources. Conceivably, if a watershed or a river basin is treated as an economic unit, the costs of installations which may need to be made upon farms near the headwaters will exceed the return to the farmers upon whose land such installations are made. For all farms in the watershed, however, the benefits may substantially exceed the costs. Under these conditions private landowners will not always use their land in a manner consistent with public interest.

When spatial dissociations of an economic nature are present, some form of group action is indicated to achieve efficient resource use..This action may take the form of total social participation, i. e., investments made from the public treasury, such as used in many reclamation and irrigation programs, or it may take a form more limited in scope, such as the methods employed in drainage and conservancy district programs.

The first action (total social participation) requires that the public investment be protected and returned if intergeographic and interoccupational dissociations, and the consequent malallocation of resources, are to be avoided.

The same principle is generally applicable to programs for a limited geographic area. If the desired investments are to be made, those who enjoy the benefits must bear the cost, at least to the extent that those on whose farms the improvements are made are not adversely affected by the change. This necessitates group tenure arrangements whereby the group can make certain improvements upon private lands, taxing the beneficiaries of such improvements to defray the costs and to reimburse those who have suffered some detriment as a result of the changes.

Some progress has been made in the group approach in solving the tenure aspects of land use problems but more remains to be done. Needed research includes: (1) refinement of the methods for economic analysis of resource organization involving a multiplicity of firms subject to various types of economic interactions and transfers, (2) more definitive analysis of public and private interests with delimitation of the range of their complementary and competitive interrelationships, and (3) development and analysis of alternative arrangements for dealing with specific land use problems. Such research is needed to guide citizens, legislatures, public agencies, and private organizations whose interests are both public and private.

The objectives of research into these problems appear to be (1) to develop a basis for identifying and delineating public and private interests in private land, (2) to determine the conditions under which the achievement of public and private interests are (a) complementary and (b) conflicting, (3) to discover and develop means for achieving and maintaining public interest in private land use and occupancy consistent with the basic elementary private property.

Private Interests in Public Lands

About a third of the land in the 50 States is owned by the Federal Government and an additional 5 percent is owned by State and local governments. Much of this land is used by private individuals and groups under well-established procedures for transmitting use rights to private parties. In some situations, however, the procedures may not be adequate for current needs. A revision of present leasing procedures may be sufficient for improvement, or changes in legislation may be required. There are situations also in which procedures for allocating use rights to public lands and other public facilities are virtually nonexistent and need to be developed.

Problems relating to private interests in public lands have not been topics of widespread concern in recent years, except for the attention given to problems involving water rights. Studies concerned with the public lands have dealt largely with resource management, and increasing attention has been given to the need for recreation facilities, water supplies, and highways.

Suggested areas of research are as follows:

(1) Development of procedures for allocating use rights to resources previously open (or comparatively open) to all users. These resources include recreation facilities, monuments, unique natural features, public roads, and other facilities, the supply of which may be inadequate for future needs. Before developing procedures for allocating private use rights in such facilities, the public ends to be achieved in the use of the facilities must be determined.

(2) Determination of the extent to which private users are denied access to public facilities, and the extent to which this is not in the public interest is a corollary topic for study. Procedures for improving opportunity of access to public lands may need to be developed.

(3) Determination of the procedures used in leasing public lands which contribute to inefficiency of resource use. Specifically, attention needs to be given to costs and returns associated with investment in public lands from both private and public sources, and the dissociations created by leasing products.

(3) Expansion of basic tenure data relating to public lands which are presently inadequate. Census procedures for enumeration of farms exclude land used under permit. Data are needed that describe more fully the characteristics of farms operated largely under permit. Further refinement of tenure classifications may be required.

(5) Research into arrangements by which private individuals and groups acquire the right to use public lands. These arrangements vary widely between agencies, and may be a source of administrative inefficiency. Research into procedures could determine if this were so, and if such inefficiencies warrant standardization of procedures for transmitting use rights.

(6) Research in the economic relations between public lands and private lands when used together for farming units, and the extent to which grazing permits are capitalized into the value of private land.

World Land Tenure Problems

Agrarian reform, broadly defined, includes a wide range of improvements in the institutional framework to improve rural levels of living and contribute to overall economic development in foreign countries. These institutions include the means by which land is acquired, held, and transferred; the distribution of returns from land between individuals holding rights in land and between the public and private sectors; the development, use, and conservation of land; and related institutions that concern marketing, communication, health, education, and other welfare services.

Land tenure reform is a more limited concept than agrarian reform, having to do with improving institutions relating to the tenure, use, and development of land.

Among the subjects of research that are directly related to land tenure structure are inheritance, gifts and nonmarket transfers; leases, permits, rents, and feudal services; credit and market transfers; taxation and public controls; titles, recording, and cadastral surveys; fragmentation and consolidation; and owership concentration.

Many underdeveloped areas of the world are characterized by tenure institutions that retard the introduction of improved agricultural production methods and create obstacles to migration or relocation by the rural population. This is most noticeable in areas where land tenure systems are tribal or semifeudal in nature. More advanced areas typically are faced with problems of tenure insecurity limiting the planning horizon of farm operators, who have difficulty in associating costs and returns due to the nature of customary tenure arrangements.

Improvement of the tenure structure is basic to successful agrarian reform. Quite frequently this improvement is thought of as the expropriation and redistribution of large privately owned holdings. An alternative approach often suggested is the distribution of unsettled public lands. But neither of these approaches may be considered and undertaken without adequate knowledge of the characteristics and supply of available land resources, the rural population to which land is to be distributed, and the amount and kind of supporting technical and financial services needed to implement meaningful and lasting reform.

Along with the need to obtain basic resource and population data, there is a need also to clarify issues involved and evaluate alternative approaches to agrarian reform problems. These issues are closely related to political, legal, and sociological, as well as economic considerations. For instance, one basic issue is the type of tenure system to be established--its suitability to the cultural and demographic characteristics, the dominant type of agriculture, the land development requirements, and the related social, political, and economic improvements needed for successful implementation.

An area of research which is significant for foreign economic assistance programs of the United States is the interpretation and evaluation of experience of the United States in improving the structure of domestic land tenure. Many of the approaches and institutional modifications developed for U.S. conditions have been recommended for use in other areas. Their usefulness depends on the success with which they can be adapted to other conditions. The purpose of the research proposed should be to evaluate the impact of institutional modifications and new techniques upon U.S. agriculture and to derive general principles of approaches taken that would indicate the modification needed for application elsewhere.

Any study of alternative approaches to tenure improvement should give full consideration to necessary supporting services. The role that supporting services can play in agrarian reform and their relationship to improvements in the structure of land tenure and use could be observed in recent agrarian reform efforts of other countries. Such analyses could be particularly helpful in obtaining guides as to the level of supporting services required to support a given type of tenure reform or, conversely, to appraise the effectiveness of supporting services as a substitute for direct reforms of the tenure system.

Land Tenure Problems of Special Groups

There are certain minority ethnic groups which may have special tenure problems because the institutional and environmental conditions in which they live may be structured to the majority group's needs. These groups may include farmers and farm laborers of

Negro, American Indian, Mexican, or Japanese origin. Not all persons in these ethnic groups have the same tenure problems; there are indications that certain land tenure problems are different in some respects for these groups of farmers than for other farmers. Farms operated by Negroes have not been enlarged in the same proportions as farms of white operators; Negro farmers have not engaged to any significant extent, either as tenants or owners, in fruit, dairy, poultry, or cattle farming. The situation may be due to inadequate capital, personal preference, or some other reason. It is also believed that Negro farmers have inherited a lower percentage of their land resources than have white farmers.

Large areas of land have been reserved by the U.S. Government for occupation and use by American Indians. Various arrangements have been developed by the tribes, with the assistance or consent of the U.S. Government, to define rights and responsibilities regarding the use of land and water resources. These arrangements differ, and there is considerable evidence that some arrangements are not satisfactory. Almost without exception the number of American Indians eligible for land and water rights exceeds the original number of Indians existing when the land was reserved. Because of this increase in population, many of the reservations are now unable to supply all eligible residents with sufficient land resources. An example of this is the Pine Ridge Indian Reservation in South Dakota where the land will support only about 1 in 10 of those eligible. Who shall have the use of the land is a very urgent question. Existing tenure rights and procedures are of little help in determining who shall have these rights, and indications are that present rules are hampering the most efficient use of the land.

Farmers of minority ethnic group origins have been confronted with special tenure problems because their training, experience, and ethnic characteristics influenced the majority group's perception of them in a negative manner. This in turn produced the present status and treatment of the minority group. Usually they must accept lower pay, farm with less resources and capital, use poorer land, and face other handicaps.

The objectives of research in this area are to determine if there are racially oriented differences between farmers with respect to (1) land tenure arrangements, (2) mobility, (3) service and legal factors, (4) capital rationing, (5) production patterns, and (6) ways of adjusting inequalities with respect to land.

Research is needed for agricultural groups of special ethnic background with respect to (1) present level and stability of income, (2) institutional arrangements for acquisition of property rights to land and water resources, (3) characteristics of these groups which influence their status and treatment, (4) availability of capital, (5) efficiency in the use of resources, and (6) mobility.

Mineral Developments

The development of mineral resources provides an additional use of land resources. It may supplement or conflict with agricultural uses. Uncertainty and speculation regarding the existence and value of mineral resources influence the extent to which these resources are developed along with, or in lieu of, agricultural uses, and thereby affect efficiency in the use of all land resources.

Where mineral resources are present, the investment in land as well as the income is large. Stability of income may be influenced greatly as a consequence. Equal opportunity for ownership and use of land resources which include minerals is a serious question where speculation and change play such an important role.

Ojectives of research on mineral developments are to provide bases for (1) determining how mineral production from land influences other land uses and the income from land; (2) evaluating land which has mineral resources; and (3) determining rights to mineral resources and mineral products and thereby the distribution of income from land with mineral resources.

Research needed includes determination of (1) methods of evaluating mineral resources (including the amount and distribution over time of expected income) and the influence of prospective mineral production on value of land used for agriculture and funds required to obtain the land; (2) methods and consequences of separating mineral rights from other rights in land (3) landowners' rights to income from the extraction of mineral products; (4) methods of holding and transferring rights in mineral resources (both leasing and sale) and the effects of each method on present and future income; and (5) influences on the use and productivity of agricultural land of the existence, ownership, and extraction of minerals.

Recreational Land

During the 1930's, when many of our land use and development institutions were established, the nation was suffering from a severe depression. Millions of people were unemployed; leisure time was looked upon as a direct result of unemployment and an unfortunate condition. These conditions and the low incomes which were associated with them resulted in a de-emphasis of recreation and the recreational use of land and water resources. In the period since World War II, the Nation has enjoyed nearly constant full employment, a rising level of living, shorter working hours, and longer vacations. As a result of these trends, a rapidly increasing number of people have more money which they wish to use to enjoy their free time. This has lead to tremendous increases in the demand for land for recreational use.

This increased economic importance of recreational use of land has been recognized, and a few workers have begun to tackle the problem of analyzing recreational use from an economic point of view. However, to a large extent we are working within the institutional framework established during the 1930's when recreational use of land was looked upon as of secondary and not primary economic importance. In a great deal of research concerning land use and development and land tenure, insufficient attention is being given to recreational factors.

The first emphasis of future research must be in the field of methodology. Recreational values are difficult to quantify for purposes of analysis. Additional work is needed to develop satisfactory general methods of isolating the economic relations between variables with respect to recreational use of land. We need to learn more about the nature of demand for recreational services, and more about the specific recreation services desired. On the supply side we need inventories of lands providing various types of recreational services.

One emerging problem concerns recreational use of land in multiple-purpose water resource development projects. In the past, the public has financed gigantic water resource developments only to be excluded from the recreational use of artificial lakes and reservoirs after financing them completely. In the future, it seems necessary to incorporate recreational resource use plans into all multiple-purpose projects.

Much work needs to be done with respect to recreation policy on public lands of all kinds. Such issues as free versus paid use, complementariness or competition between recreational and other uses, and welfare aspects of recreation are involved here. Closely related is the question of whether we are to encourage private or public development of specific recreational types.

Another emerging problem concerns the economic analysis of recreational use of private land. For example, in some areas income from hunting leases has become an important source of income, in others, it offers possibilities. Involved in this topic are questions of costs versus returns, and questions of organization from the standpoint of consumer (hunters) and producers (farmers).

Tenure Aspects of Agricultural Labor

The topic of agricultural labor implies attention to at least three subtopics: (1) the tenure aspects of the continued movement of the labor factor out of U.S. agriculture; (2) the existence of a hired labor force on farms in all parts of the country; and (3) the dependence on seasonal labor of farms in some areas.

The economic aspects of the movement of labor out of agriculture are very complicated and cut across other topics listed in this section, as well as several other fields of study in agricultural economics. From the tenure standpoint there is need for greater understanding of the relation of outmovement of farm labor to the marginal productivity of labor, and the further relation between this and the capitalization of farm returns into farm land values. Presumably, as the labor factor becomes more scarce, competition for land by farm people might decrease, and the labor factor might in turn benefit at the expense of the land factor.

Concerning the full-time hired labor force, there is a lack of knowledge of the effects of various arrangements between employer and employee on efficiency, income distribution, and capital accumulation. Attention should be given to the factors affecting the supply and quality of labor in the farming industry. More knowledge is needed concerning the nature of the rural job market and the effect of industrialization on rural communities. Another question concerns the implications of the development of professional farm management companies on the labor factor in agriculture, and the possible role of labor with the introduction of integrating arrangements into agriculture.

Separate attention needs to be paid to migratory labor. Among the topics which need study are the impact of housing, educational opportunities, and medical services on the supply, mobility, and efficiency of labor. Another is the relationship between wage rates and productivity of migratory labor. The possibilities for more effective use of the human resources which are represented in migratory labor need exploration.

Law and Land Tenure

Law is a formal provision for institutions to facilitate the attainment of objectives of people. It reduces or eliminates uncertainty with respect to actions of individuals or groups of persons. Enforcement of contracts, protection and limitation of property rights, and establishment of standards and regulations for relationships among persons are some of the basic functions of law.

The economic objective of law is to promote the general economic welfare. Laws may be expected to encourage or enforce uses of resources which will result in maximum production and optimum distribution of products; they may provide for the association of costs and returns or specify deviations in the association.

Laws affect production through assuring owners that their property will not, or cannot, be arbitrarily taken from them. This permits planning for production and consumption to optimize the use of resources and consumer goods and assures the owner of a resource that he may claim the products or benefits from its use.

Zoning restrictions, grazing permits, soil bank programs, and similar regulations affect production through specifying use or limitations on use of resources.

Economic research dealing with laws requires (1) an appraisal of present laws with respect to their influence on production and distribution and (2) the designing of laws (new laws or revisions of old ones) to facilitate the attainment of economic objectives.

Specific problems for legal-economic research include (1) methods of acquiring and holding real estate; (2) division of ownership--water rights, mineral rights, and easements; (3) the business unit for farming--individual, partnership, or corporation--and production and marketing contracts; (4) group organizations for resources development or control--watershed, irrigation, and drainage districts; (5) landlord-tenant relationships; (6) borrower-creditor relationships; and (7) social controls such as zoning.

Mechanization and Farm Tenure

Mechanization as a part of the general technological advance in farming has placed a strain upon tenure patterns and arrangements. Machines have displaced labor (necessitating more skillful farm workers and operators), and have tended to increase farm size and population pressure in many rural areas, with the result that persons of all tenure classes have experienced changes in their roles in agriculture and in society. These changes have involved more than shifts in incidence and amounts of income among tenure groups, although these have been important effects; rental arrangements have come under stress as mechanization has increased.

Mechanization and tenure are also interrelated with age, levels of living, community organizations, reproductive rates of farm families, and retirement of farm people. A current regional project in the Southwest has the following stated objectives:

1. To determine the impact of mechanization upon land tenure arrangements.

2. To determine the impact of mechanization upon levels of living within land tenure classes.

3. To determine the related social adjustments necessitated by changes in mechanization and tenure.

4. To determine the differential effect of mechanization for different agricultural systems.

Two more objective may be added: (1) to determine those elements of the tenure system which constitute obstacles to the adoption of mechanized farming and hamper the substitution of capital and land for human energy; and (2) to devise means of overcoming these obstacles so that all resources can be used with maximum effectiveness.

Institutions Affecting the Mobility of Resources

Economic and social change generally require shifts in resource use and control. Migration of people and capital out of areas where resource returns are low has been accepted as a requirement of economic progress. However, many areas of outmigration are still depressed. Apparently the improvement of a depressed area depends upon something more, or other, than migration.

Where institutional impediments to adjustment in rural areas are severe, economic depression may persist. Agricultural resources that could profitably be combined with other resources remain idle. Scattered landholdings are not consolidated into efficient units. Land does not shift out of cultivation and into grazing, forestry, recreation, or other extensive uses. Unprofitable cropping and livestock practices are continued. Idle and abandoned land results in losses of revenue to local governments and substantially raises the per capita cost of public services. Often small communities are not prepared to bring about, or even to accept, desired and needed rural changes, and local leaders may not be equipped to assume a leadership role under conditions of rapid change. The effects of various Federal, State, and local programs may be nullified by a landownership pattern that channels the benefits of public action to other than the desired recipients. Credit institutions may fail to provide the amount or form of capital needed to bring about desired adjustments. The administration of welfare services may impede rather than encourage needed changes.

Landownership patterns stand in the way of recombining scattered tracts into efficient economic units, tend to prevent needed changes from agriculture to forestry and recreation, and impede the shift from crops to livestock, Landownership may obstruct migration. Landownership and income tend to be more concentrated (less evenly distributed) as a result of migration. Methods of title registration and transfer and the localization of real estate markets prevent easy, economical transfer of property. Older owners are slower to transfer land, thus age selectivity of migration tends to slow the resource market. Absentee ownership often is not conducive to land use changes or to making needed investments. Inadequate leasing markets fail to put land into use. Rigid land values, capitalized historically on the basis of production and price expectations that cannot now be realized, deter transfers that would aid in combining small units and shifting land uses. Landownership patterns tend to deter changes in resource use because individuals are irrevocably committed to decisions the bases of which have been changed.

One of the difficult economic problems in rural areas is in meeting expanding demands for services of local governments. Problems of local finance stem partly from inappropriate forms of local governmental organization. In most States, the structure of local government was established generations ago. Technological developments have caused large numbers of people to migrate out of rural communities. As a result, many of our rural school districts, townships, and counties are no longer effective administrative units for the functions they are now called upon to perform. Research on rural government should be expanded to explore the potentialities of new forms of local governmental organization for rural communities.

The various public programs seeking to ameliorate the consequences of depressed agricultural incomes may, in some instances, create resource immobilities. Measures intended to withdraw land from production of crops may not effect outmigration or needed adjustments in resource use unless new or expanded types of community or governmental services are provided and other institutional changes are inaugurated. Programs designed to withdraw small units of land from production may impede their combination into large units needed for more extensive land uses. The benefits of price support programs may be capitalized into land prices or into the prices of labor and capital employed in agriculture. Watershed and river basin development may require completely new forms of local government, sources of revenue, and relationships between public and quasi-public institutions.

No important private or public institution provides credit directly for transfer of resources within agriculture or between agriculture and industry. Private institutions have concentrated on credit secured by nonmobile assets; public credit programs have concentrated on either real estate loans or loans for capital items. Extensive investment in social overhead capital could substantially alter the role of rural credit. Credit to individuals for education and training could provide for needed resource transfers. Studies are needed to indicate new uses for social and individual investment in human capital and movement.

Eminent Domain and Other Forms of Public Acquisition

Extensive tracts of rural land are being acquired for reservoirs, highways, airports, parks, and fishing and hunting areas. Many public agencies--Federal, State, and local--are involved in these acquisitions. Differences exist in the project planning and acquisition procedures of the various agencies and in the development or coordination of project plans with local groups and communities, and in appraisal, negotiation, and pricing procedures. Some agencies lack needed legal powers and at times seem uncertain of the powers that exist or possible uses to be made of them. Agencies constructing and maintaining public facilities may give inadequate attention to the community land use patterns that they may impose or stimulate. Some landowners may be insufficiently compensated for property taken, while others may gain from rising land values brought about by the presence of the public installation. Many in the latter category do not lose land in the construction of a facility.

Many studies were undertaken during the 1930's and early 1940's to analyze effects of river basin development on those from whom property was acquired. Research in the Missouri Basin States and in the Tennessee Valley showed that certain planning and land acquisition procedures imposed financial hardships on individuals and communities, whereas other procedures employed by some agencies reduced these financial hardships.

Over the years, economists have given some attention to highway impacts. This interest has multiplied with the advent of high-design highways and the passage of the Federal Aid Highway Act of 1956, establishing the National System of Interstate and Defense Highways. Most of the highway studies undertaken centered upon the effects of highways on use, development, and value of adjacent private lands or lands in communities or regions through which highways passed. These studies show that highways can greatly increase land values in populated areas as well as in rural areas where nonfarm developmental opportunities arise. Only a few studies have been made of local disruptive effects of highways and recreation areas and procedures necessary to minimize these effects.

More information regarding the project planning and land acquisition procedures used by different Federal, State, and local agencies in establishing reservoirs, highways, recreation areas, and airports in needed.

The advantages and disadvantages of various acquisition tools used by agencies responsible for the acquisition of private land for public purposes should be determined. For example, under eminent domain an agency can pay just compensation for property acquired, but also it can avoid being charged exorbitant prices by speculators. The analysis could extend to the tools available to protect public facilities once established.

Other tools, such as easements, leases for short or long term (with or without options to buy), cooperative agreements with other public agencies and private individuals, and advance acquisition schemes, need to be related to the particular economic situations for which they are best suited.

The economic consequences of alternative project planning and land acquisition procedures or techniques warrant study. Consideration should be given to effects of alternatives on the owners whose property is to be acquired, the action agency and the taxpaying public, the project beneficiaries or users, and the community and region within which the project is located. Both the magnitude and incidence of benefits and costs could be measured for alternatives. Special attention might be given to techniques for assessing some project costs to those who gain land value benefits as a result of the location of the project.

Nonagricultural Land Tenure Problems

The nonagricultural requirements for resources are increasing relative to agricultural requirements. Compared to research on tenure problems associated with agricultural land, however, very little study has been made of tenure problems on nonagricultural land. Growing interest in land for recreation, forestry, and rural residence calls for new and unique means to balance multiple uses, invest in long term improvements, separate and transfer special rights, control public access, tax new activities, and market new products and services.

Several regional and national surveys of recreational demand, supply and research requirements have revealed a need for studying ownership and control arrangements for recreational resources. Recreational resources are changing from essentially free factors to economic factors. A market, as such, does not exist for many types of recreation. Research is needed to answer questions of public policy and to devise means for implementing public programs. Research also is needed to improve the market for rights in recreational resources and to aid in private decisions. Pricing recreational services of private facilities located on, or adjacent to, public resources presents unique problems in distribution. Control of access to recreational sites may be needed to preserve quality but this requires a system of priorities if an adequate market does not exist. Conditions and means of public control on private lands need to be studied. Group tenure arrangements for the exploitation of recreational resources in the community may be studied; methods for valuation of recreational sites and facilities are needed; and methods for analyzing nonmoney variables also are needed.

Nearly three-fourths of the private forest land and over half of the commercial forest land is held in tracts of less than 5,000 acres by 3 million farm owners and 1 million nonfarm owners. These small private holdings represent the largest potential in increased timber production. There are several reasons for the low productivity on these small ownerships, such as the long wait for return on investment, property taxes, inadequate credit for forest improvement, inadequate market for timber resources, small size of tracts, pricing of mixed timber-agricultural land on an agricultural basis, and inadequate source of employment for owners. Also small ownerships usually are the least adequately protected from fire, insects, or other losses.

Tenure research on small tract forestry might be directed first at defects in the pricing of both growing timber and land units only partly used for timber. Attention also should be given to group arrangements by which landowners are provided management, contracting, and operating services. Markets for timber which provide the small timber owner with annual payments while the trees are growing rather than lump sum payments when the timber is cut could be devised. The effect of ownership on timber management should be determined.

Urbanoid areas--rural places heavily influenced by, or having some characteristics of, urban development--create special problems in tenure, taxation, community services, and transportation. About 1 million acres a year are absorbed in urban and built-up areas and perhaps another million acres are directly affected by the rate and location of urban development. Researchers may be called upon to assist in rural-areas planning for water control, recreation, and highways, and in designs for multiple uses such as combinations of forests, recreation, and watershed protection. The pricing of joint products and nonmarket services presents a unique problem to the economist that may require the cooperation of other social scientists. Devices which are designed to induce orderly changes in land from rural to urbanoid uses should prevent unemployment of resources in transition areas, provide for future uses of resources, and minimize dissociation of benefits and costs, noting especially the transfer of rights between private citizens and the public.

Many rural, nonagricultural lands are affected by the relationships between private ownership and the public interest or between public ownership and private interests. Public ownership may be superior to private ownership where benefits or costs are widely diffused, where a land use is expected to continue a long time, where the land use produces joint products, and where intangibles constitute a large portion of the value of services provided by land. Where the success of a land use depends on many day-to-day decisions, where the consequences of right or wrong decisions are immediate and direct, and where benefits or costs are tangible and are expressed in money, private ownership may be superior. Exclusive rights by either private owners or the public are rare, however, and there is a need for devices to appropriately reflect the interests of each in the ownership of land held by the other. Flood plains, unique natural or historical sites, and wildlife breeding areas are examples of land uses with both public and private interests. There is a need to evaluate the effects on resource use, of various devices, such as covenants, easements, zoning, and rental contracts especially over long periods of time.

Inheritance and Estate Management

Virtually all agricultural land and most other land is at some time exposed to inheritance, gift, or estate management. The means by which ownership is transferred will substantially affect the distribution of resource ownership. Market transfers involve one set of research problems, while nonmarket or extra-market transfers create another set of problems. Although of direct and specific interest to individuals and their heirs and donees, problems of nonmarket means of transferring resources are also of interest to society.

Substantial legal and economic research has been done on the management of estates, especially farm property, from the standpoint of benefiting the individual within a specified environment. The specified environment was usually the statutes and other laws of the State in which the property was located plus the personal circumstances of the owner and transferee. Several excellent publications have indicated alternatives for property owners and their beneficiaries to accomplish such objectives as to legally minimize taxes, distribute or retain various interests in property, and provide regular income to transferors, Few of these inquiries have been directed at the effects of transfers on the economy or on society.

Many questions about the aggregative effects of inheritance, gifts, and other estate management devices remain unanswered. What are the effects of inheritance on farm size, fragmentation, consolidation, and reorganization? What are the effects of inheritance on farming opportunities? What is the net effect of the nonmarket transfers on conservation and long-run investment? How does the inheritance system affect the distribution of control of agricultural resources as between agriculture and nonagricultural sectors of the economy?

The orientation of research in this area should be toward measures that the public might undertake to accomplish public objectives. In general, such research would be useful for changing laws that affect taxation and succession of ownership. Particular attention might be given to comparing the effects of inheritance and gift practices in agriculture and in the rest of the economy.

Corporations and the Organization of Agriculture

Revision of the Federal income tax law pertaining to the small, closely held corporation has renewed popular interest in use of this form of business organization for agriculture. However, most attention has concentrated on effects on the firm--advantages and disadvantages to the owners of farm assets and the operators of farms.

The Census of Agriculture does not classify farm corporations, nor does any other source provide an accurate total of operating farm corporations. However, limited information does indicate that from 5,000 to 10,000 corporations are engaged in agricultural production. In several States the number of incorporated farms is increasing. Under the present structure of agriculture, few of the inherent advantages of large-scale corporations are realized. But, if the corporate farm were coupled with modifications in the labor, land, and capital markets, substantial changes might result.

The growth and adaptation of farm corporations will take place as other changes in agriculture occur. The reduction in farm numbers and concomitant increase in farm size will complicate the beginning farmer's problem of obtaining control of productive assets. Technological advance may place a higher premium on managerial capacity of farm operators and utilize more services of specialists not attached to a particular firm. Vertical integration and the wider use of contracts and other instruments will consolidate the farm with prefarm and postfarm stages of production. A dwindling proportion of the population coupled with a constant or growing agricultural production may encourage wider nonfarm ownership of farm assets.

The corporation is a versatile legal-economic device around which could be built a major reorganization of agriculture. If corporations became the means by which present resource markets could be improved, they would probably become an important form of business organization. Most projections of the importance of farm corporations are made in the light of present institutional conditions. If such institutions as the tax structure, resource markets, credit programs, and information services were to change, so might the farm corporation. Research is needed to determine the organizational relationships in the structure of agriculture that are of importance to the farm corporation so that needed adjustments both in the system and in the corporate farm can be suggested.

A few of the areas of research on farm corporations might include studies of (1) variables affecting the optimum size of farm corporations, (2) markets in resources for, and securities of, farm corporations, (3) second-order organization such as holding companies, market associations, and management services, (4) educational and training requirements of corporate managers, (5) leasing of land, livestock, and equipment by farm corporations, and (6) relationship of government to farm corporations in agriculture.

Contracts and the Organization of Agriculture

The integration of farming with other businesses through contractual arrangements has recently become more significant as an institution in the American economy. The contracts incident to the integration are presumably associated with peculiar tenure relationships and organizational structures in American agriculture. The programs of vertical integration constitute economic reorganizations in which the ownership interests in farm resources and the control over these resources may be redistributed. The contractual arrangements also affect the interpersonal division of rights to make farming decisions as well as to receive income from farming. Further, and from another viewpoint, such farm tenure arrangements as leasing may serve either as restraints or as factors conducive to the adoption and expansion of integration programs. At the same time, the introduction of farm production contracts and integration may involve modifications of traditional rental arrangements, and new kinds of farm operators in terms of their functions and tenure.

Thus, farming under contract has become a part of the American farm-tenure complex and has opened up many new problems for research. Two broad problem areas may be outlined. One area would deal with the effects of integration in its various forms upon the ownership pattern and control of farm resources and with the development of the types of integrating arrangements that are fair in terms of the distribution of farm income. The other area would deal with the tenure-related conditions that affect both entry into integration contracts and their execution, and with the modification of traditional tenure arrangements through the integration phenomenon.

Studies might be undertaken on these more specific aspects of contract farming and vertical integration: (1) sharing of management and uncertainty; (2) division of returns in relation to the contributions of the participants; (3) leasing innovations or modifications incident to contracts; (4) kinds of operatorships, and ownership interests evolving as a result of integration; (5) effects of contracts on entry into and exit from production; (6) the expected growth and direction of integration in agriculture with interest focused on the policy implications of the growths anticipated; and (7) studies of integration as a mechanism to control and stabilize the volume and quality of various agricultural commodities.

PREDICTION, PRESCRIPTION, AND PUBLIC POLICY

Land tenure as a discipline traditionally has been confronted with questions about the way people "ought to" behave in relation to property. Presumably, these questions have thrown land tenure in with the other so-called "policy sciences." But land tenure as a field of social science has responsibilities in analysis and prediction as well as "social engineering." Therefore, some distinction among the functions of prediction, prescription, and public policy may be helpful to the researcher as well as to the policymaker. The social scientist inevitably assumes the role of social engineer at times in the course of his work. Here, however, we attempt to distinguish functions, not individuals. Both the social science and the social engineering aspects of land tenure are important to the discipline and neither can be ignored. However, their conceptual separation can improve both.

As a social science, the function of land tenure analyses is predicting the effect of ownership and control arrangements on various economic and social variables. The analytical procedures are basically the same for tenure research as for any other science, but the subject matter may affect the methods used in any particular study. For example, land tenure research encounters many problems involving changes and processes. Resource development and conservation, concentration of control, and institutional change are problems for which procedures designed to analyze static conditions may be inadequate. Land tenure research includes problems involving large areas and aggregations of resources as well as separate firms. Thus, questions of social as well as individual welfare need be answered. Welfare transfers between and among groups and individuals cannot often be ignored. Many such problems of income distribution are, in fact, the core of tenure research. Land tenure crosses into the social sciences, thus compounding the problems of analysis.

Tenure research, as such, is limited to prediction. Prediction is a simplified description of relationships between variables such that a state of one variable explains the state of another variable. For example, the rate of fertilizer use will be predicted (in part) by the proportion of the fertilizer expense paid by landlord and tenant. In relation to prescription or policy, prediction is most useful in describing the probable outcomes of alternative programs or actions. If all relevant actions are so analyzed, prediction may seem tantamount to prescription. This is not the case, however, because prescription usually involves assumptions, particularly about values and preferences, outside the scope of the analysis. A prediction of the consequences of actions is almost always short of a complete basis for prescribing what ought to be done.

Social engineering is a process of prescribing means to accomplish some policy objective. Policies may be specified for communities, nations, contracting parties, or individuals. The institutional means for accomplishing their ends might be for example, a constitution, a law, a custom, or a contract. Scientific procedure may test the efficacy of such means but does not invent them. A great many actions are taken without recourse to analysis or are based on the results of previous research.

Tenure research is frequently called upon to service policies and programs. A policy of family farming, for example, might be implemented by recommendations for special credit programs, resettlement, or land development. Or a policy of reflecting greater public control of privately held land might be implemented by public acquisition, easements and covenants, or leases. Tenure research, although not a part of program planning and policymaking, may be of service to both. In general, tenure research may be of value at several stages of policy and program formulation: First, in indicating the need for some action by showing the expected consequences of not taking an action; second, by estimating the expected consequences of alternative courses of action; third, by determining the actual effect of a course of action after it has been taken.

As a social science, tenure research is solely a process for producing valid inferences and verified hypotheses. The confinement of tenure research to the service of programs and policies would probably preclude systematic development of the discipline. Time limitations alone may limit the depth and extent of research undertaken to service programs or policies. On the other hand, research which too studiously avoids any possible application of its findings runs the risk of sterility or stagnation. The distinction between social science and social engineering does not imply a greater importance of either. On the contrary, one is not likely to survive without the other. The primary reason for separating science and engineering is the great mischief that can be done by the misuse of science and scientific findings.

ORGANIZATION AND PRIORITIES FOR RESEARCH

Research activities cannot take place in an organizational vacuum; it is almost trite to say that research organization can either enhance or diminish the effectiveness of research workers. Some comment on the organizational framework in which land tenure is carried on is appropriate.

Since the first attempts at definition in the early 1920's the field of land tenure research has increased in terms of both number of workers and research budgets. Significant research work is underway in most agricultural experiment stations and the U.S. Department of Agriculture. In addition several foundations have research programs in land tenure directed at both foreign and domestic problems.

A most useful organizational device for the enhancement of research effectiveness has been the Regional Land Tenure Committees. These committees have provided convenient mechanisms for bringing together research workers from the Colleges, the USDA, and the Farm Foundation.

These committees serve as a forum for the exchange of ideas related to problem identification, methodology, and concepts. They serve as a means whereby problems which are unique to a region, but too general to be of interest to a single State, can be identified and defined. They provide a mechanism whereby the results of research can be reviewed and distributed widely, and whereby policy suggestions growing out of research can be formulated.

Actually research work is seldom done by the tenure committees, but rather by their subcommittees. It should be noted that there are two kinds of subcommittees in connection with the regional committees, the service subcommittee and the research task group.

The service subcommittee is a typically specialized arm of the committee which is set up to carry on a special activity, such as a workshop, the preparation of a report, or some other similar task. Research task groups are set up to undertake specific research under a regional project, or through cooperative agreements between participants. Not every research problem is better handled by a subcommittee than by an individual, of course. The greatest gains from subcommittees result when a research problem can be fragmented temporarily, and when there can be shown to be returns to scale because of efficiencies with respect to conceptual analysis, sample design, or data processing. Of course, in the end research is carried on by individuals rather than by subcommittees; the major contribution of the subcommittee is in terms of intellectual stimulation and criticism.

Though inherently difficult to measure, the benefits of regional committees accrue in terms of the professional growth and productivity of research workers, the reduction of duplication of work between the cooperating agencies, and the greater total competence of the work being performed.

Several problems of research organization with respect to land tenure work can be cited; these are not particularly unique to any one research field. The present project system in vogue among both State and Federal agencies tends to create short-run, rather narrow projects by research workers. In the long run, effective research is a function of the competence of the workers involved, and not the specific projects which are drawn; of course, the accounting of funds is necessary. However, research efficiency would be enhanced if financial support could be associated with longer-run projects designed in more general terms. Progress reports could still indicate current activity. The mature worker is probably the best judge of which topics are most important in his field; his productivity will be reflected best in the long run by the quality and quantity of his written results.

A statement of research needs in land tenure--essentially what this document is--is helpful if it provides the researcher with a systematic overview of his field. The solution to a particular problem thus has meaning in a larger perspective. A recitation of research needs, however, doen not tell the researcher what he ought to do. Someone, perhaps the researcher himself, must make a decision on which problems to study first. Research resources are not unlimited nor can everything be studied at once. Priorities must be given.

The judgment of priority is based upon (1) relative importance of the anticipated results, (2) chronology or sequence of findings, and (3) limitations imposed by resources available. These factors can be used by any consumer of research, but ratings will differ according to judgments of the research consumers. Allocaters of research resources place their own evaluation on what is most important, what should be done first, and which resources should be used. The decision of the allocater of research resources, therefore, is critical. Many consumers of research, for whom the allocator is making decisions, may belong to future generations. Many consumers of research are not able, or do not wish, to use the product prepared for them. The allocater must base his judgment of priorities on the prospective usefulness of abstract results prepared for unknown consumers, from intangible resources. It is an awesome but unavoidable task. If the regional research committees can provide even a small measure of aid in accomplishing this task, they will have served an important function.

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